

REMARKS

Applicants have amended their claims in order to further clarify the definition of various aspects of the present invention. Specifically, Applicants have incorporated the subject matter of claim 3 into claim 1. Correspondingly, Applicants have cancelled claims 3 and 8 without prejudice or disclaimer.

In addition, Applicants are adding new claims 15-23 to the application. Claim 15, dependent on claim 1, recites that the surface-active property is a wetting property, with the compound (C) increasing the wetting property of the coating composition as compared to the wetting property of a composition of compound (A) and catalyst (B) and no compound (C). Note, for example, the last paragraph on page 8 of Applicants' specification. Claims 16 and 17, each dependent on claim 1, further define amount of compound (C) contained in the coating composition from which the coating film is obtained, consistent with the description in the paragraph bridging pages 10 and 11 of Applicants' specification. Claim 18, dependent on claim 1, recites the coating film according to claim 1 on a substrate, thereby forming a coated substrate; and claims 19 and 20, each dependent on claim 18, define material of the substrate, consistent with the description in the paragraph bridging pages 15 and 16 of Applicants' specification. Claims 21-23 define a process for coating, including coating the coating composition from which the coating film according to claims 1, 2 and 4, respectively, is obtained, on a substrate.

The concurrently filed RCE Transmittal is noted. In view thereof, the present amendments and Remarks, constituting the necessary Submission under 37 CFR 1.114 for this RCE Transmittal, are to be entered as a matter of right.

Applicants respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of the

references formally applied by the Examiner in rejecting claims in the Office Action mailed November 24, 2008, that is, the teachings of the U.S. patents to Amagai, et al., No. 6,130,307, to Sakagami, et al., No. 5,777,000, to Okazaki, et al., No. 6,303,747 (Okazaki '747), and to Okazaki, et al., No. 5,693,738 (Okazaki '738), under the provisions of 35 USC 102 and 35 USC 103.

Initially, Applicants respectfully traverse reference by the Examiner to the following U.S. patents, without formally applying these references in a rejection under 35 USC 103: No. 5,599,778 to Ishikawa, et al., No. 4,477,366 to Robertson, No. 5,043,409 to Lammerting, et al., No. 5,428,092 to Ishikawa, et al., and No. 5,486,322 to Fuchs. Reliance on these references, without applying these references as part of the formal statement of the rejection and without an analysis as required under 35 USC 103 applying these references, is clearly inappropriate. See In re Hoch, 166 USPQ 406, 407 n.3 (CCPA 1970).

Moreover, if the Examiner applies these references in the formal statement of the rejection in a subsequent Office Action, and noting that present claim 1 is the same as previously considered claim 3, it is expected that the Examiner cannot make the next subsequent Office Action applying these new references (in the formal statement of the rejection) a Final rejection.

In any event, as the Examiner has not formally applied the above-listed five U.S. patents, no complete discussion of these references is necessary. However, suffice it to say that, as the Examiner has referred to these references, they describe mold release agents; and it would not have been obvious to apply the teachings of these references to optical materials such as plastic lenses for glasses, as in Amagai, et al.; and, moreover, clearly would have neither disclosed nor would have

suggested a coating film as in the present claims, or a coating film on a substrate or a coating process forming such coating film, as discussed in detail infra.

It is respectfully submitted that the teachings of the references as properly applied by the Examiner in the Office Action mailed November 24, 2008, would have neither disclosed nor would have suggested the presently claimed coating film, formed by polymerizing and curing a coating composition containing, in addition to specified amounts of a thiirane ring-containing compound and a catalyst for accelerating polymerization thereof, a specified amount of a modified silicone oil selected from the group consisting of the modified silicone oils with the formulas (3)-(6) in claim 1, this modified silicone oil having a surface-active property (see claim 1), more specifically, wherein this modified silicone oil increases the wetting property of the coating composition as compared to the wetting property of a composition containing the thiirane ring-containing compound and the catalyst and no modified silicone oil listed in claim 1 (see claim 15).

As will be discussed in more detail infra, it is respectfully submitted that Amagai, et al. discloses a composition for forming optical materials such as a plastic lens for glasses, and would have neither taught nor would have suggested a coating film as in the present claims. It is respectfully submitted that this recitation of the film being a coating film must be given weight in determining patentability of the presently claimed subject matter, particularly with respect to the product in claim 7, the coating film on a substrate as in claims 18-20, and the process for coating as in claims 21-23. It is respectfully submitted that the descriptor "coating" gives life and meaning to claims directed to the coating film, and thus must be given weight in determining patentability. Note Manual of Patent Examining Procedure (MPEP) 2111.02; see also Kropa v. Robie 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Furthermore, and as also discussed in more detail infra, a wetting property of the coating film is an important feature of such film, for providing a desired coating thickness, for example. Note that a wetting property, desired by the present invention, is diametrically opposed to a mold release property, wherein it is desired that there not be a “wetting” of the mold. According to the present invention, by using the specific modified silicone oils as claimed for compound (C), in amounts as in the present claims, although a mold release effect would be ordinarily expected, surprisingly a wetting property is obtained, achieving objectives according to the present invention.

In addition, it is respectfully submitted that these references as applied by the Examiner would have neither disclosed nor would have suggested such a coating film as in the present claims, having features as discussed previously in connection with claim 1, and having further features as in the dependent claims presently in the application, including (but not limited to) wherein the coating film has a thickness as in claims 11-13; and/or wherein the coating film composition utilized in forming the coating film further includes a silane coupling agent (see claim 2), or wherein the coating film further includes an inorganic filler (see claim 14); and/or further definition of the compound (A) as in claims 4 and 5; and/or amount of the compound (C) in the coating composition as in claims 16 and 17.

Furthermore, it is respectfully submitted that the references as applied by the Examiner would have neither disclosed nor would have suggested the coating film as discussed previously in connection with claim 1, on a substrate, thereby forming a coated substrate (see claim 18), in particular wherein the substrate is made of a material as in claims 19 and 20; and/or wherein this coating film is provided on a surface of an optical product, as in claims 7 and 10.

Moreover, it is respectfully submitted that the teachings of these applied references would have neither disclosed nor would have suggested such a process for coating as in the present claims, including wherein the coating composition from which the coating film according to claims 1, 2 and 4, respectively, is obtained, is formed on a substrate (note claims 21-23).

The invention being claimed in the above-identified application is directed to coating films obtained by polymerizing and curing a composition including a thiirane ring-containing compound, (optical) products provided on a surface thereof with such coating film, and processes of forming such coating film on a substrate.

As described in the paragraph bridging pages 1 and 2 of Applicants' specification, the present inventors have found novel sulfur-containing compounds having episulfide structures, and have developed transparent resins having a high refractive index. Such compounds have been disclosed as being cast into a mold, and then polymerized and cured to obtain a cured product thereof.

But there is a strong demand for incorporating the transparent resins in coating compositions, for coating various substrates.

However, since film materials made of the transparent resins generally exhibit a poor wetting property to various substrates, it is difficult to stably form a thin film having a thickness of from several μm to several tens μm . Note, for example, page 2, lines 5-8 of Applicants' specification.

As described in the last paragraph on page 2 of Applicants' specification, there have been proposed compositions composed of the thiirane ring-containing compound and a silane coupling agent; however, such silane coupling agents have been added in order to achieve proper molding. Note also the paragraph bridging pages 2 and 3 of Applicants' specification, describing other uses of thiirane ring-

containing compounds, including in coating films used for dental purposes, required to exhibit a high hiding property.

Against this background, it is still desired to provide coating films having a high refractive index, little discoloration and having transparency, uniformity and adhesion property, formed from coating compositions having a high wetting property.

As a result of extensive studies, Applicants have found that coating films formed by polymerizing and curing a coating composition as in the present claims exhibit a high refractive index, little discoloration and excellent transparency and uniformity. Moreover, Applicants have found that a coating composition utilized for forming the coating film of the present invention exhibits a good wetting property, wherein, for example, the compositions include the modified silicone oil, in specified amounts, as recited in the present claims.

Amagai, et al. discloses a composition for a resin which is advantageously used for optical materials, the composition comprising (a) a compound having one or more structures represented by the formula (1) as set forth in line 40 of column 2; and (b) a compound having one or more isocyanate groups and/or thioisocyanate groups in one molecule. See column 2, lines 34-57. This patent discloses that the resin is obtained by curing the composition by polymerization. See also, column 5, lines 39-42. In the paragraph bridging columns 14 and 15 of this patent, it is disclosed that when the composition tends to show difficulty in cleavage from molds after polymerization, it is possible that the property to release the obtained cured material from the molds is improved by using or adding a conventional external or internal mold release, examples thereof being given.

It is emphasized that Amagai, et al. discloses including silicone materials in the compositions for release from a mold, in article of manufacture (not coatings). In

contrast, according to the present invention the recited coating film has an improved wetting property of the coating composition used in forming the film, due to, inter alia, the recited modified silicone oil included in the composition. Again, it is respectfully submitted that the wetting property is diametrically opposed to the internal mold release. Especially in view thereof, it is respectfully submitted that the teachings of Amagai, et al., would have neither disclosed nor would have suggested the presently claimed coating film, formed by polymerizing and curing the coating composition of the present claims, including, inter alia, the recited modified silicone oil.

The undersigned again notes that the five listed U.S. patents in the last six lines on page 2, and the first six lines on page 3, of the Office Action mailed November 24, 2008, are not part of the present rejection. Again, while the Examiner has referred to these references as disclosing various mold release agents, it is respectfully submitted that mold release is diametrically opposed to a wetting property, and it is respectfully submitted that taking the teachings of Amagai, et al., even in light of the teachings of these five listed U.S. patents, such combined disclosures would have taught away from the coating film, or product with such coating film, or such coating process, as in the present claims.

It is respectfully submitted that the additional teachings of Okazaki '738, Okazaki '747 or Sakagami, et al., as applied by the Examiner in connection with claim 14, would not have rectified the deficiencies of Amagai, et al., such that the presently claimed invention as a whole would have been obvious to one of ordinary skill in the art.

Sakagami, et al. discloses a plastic lens made of a synthetic resin and a production process thereof. Each of the Okazaki, et al. references disclose optical

materials. These references, as applied by the Examiner, disclose that the compositions can include a filler.

Note that each of the applied references to Okazaki and to Sakagami, et al. describe articles of manufacture made of the disclosed compositions. This is similar to Amagai, et al., disclosing an article of manufacture made of the recited composition. The teachings of these references as a whole would have taught away from the coating film, coating film on a substrate and coating process, as in the present claims.

Moreover, it is respectfully submitted that the combined teachings of Amagai, et al. and any one of Sakagami, et al., Okazaki '747 and Okazaki '738 would have neither disclosed nor would have suggested the coating film or use thereof as in the present claims, including, inter alia, the modified silicone oil in an amount thereof as in the present claims, and advantages thereof in improving the wetting property of the coating composition forming the coating film.

Attention is directed to the amount the modified silicone oil included in the coating composition in the present claims. As stated, for example, in the paragraph bridging pages 10 and 11 of Applicants' specification, when the amount of modified silicone oil (C) added is less than 0.005 parts by weight, the obtained coating composition tends to be insufficient in wetting property. Again emphasizing that the references as applied by the Examiner describe an article of manufacture, not a coating film, it is respectfully submitted that the teachings of the applied references would have neither disclosed nor would have suggested amount of the modified silicone oil (C), and advantages achieved thereby.

In view of the foregoing comments and amendments, and in view of the concurrently filed RCE Transmittal, entry of the present amendments, and

reconsideration and allowance of all claims being considered on the merits therein,
are respectfully requested.

Applicants request any shortage of fees due in connection with the filing of
this paper be charged to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP,
Deposit Account No. 01-2135 (case 396.45772X00), and please credit any excess
fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By /William I. Solomon/
William I. Solomon
Registration No. 28,565

WIS/ksh
1300 17th Street N., Suite 1800
Arlington, VA 22209
Tel: 703-312-6600
Fax: 703-312-6666